

## **AMENDMENTS TO THE CLAIMS:**

### **Listing of claims**

Claim 1 (Previously Amended): A structural panel system for use in constructing a building, comprising:

a plurality of panels having a generally flat upper face and lower face in opposing relationship to each other; an edge; a flange disposed peripherally along at least a portion of the length of the edge extending parallel to the surface of the edge and above at least one of the upper and lower faces of the panels; a plurality of raised ribs extending perpendicular to and across one of the upper and lower faces of the panels; wherein the other of the upper and lower faces is smooth and the upper and lower faces, the edge, the flange and the plurality of ribs are integral pieces; and

a fastening device for securing the plurality of panels to each other;

wherein some of the plurality of panels are fastened together to form an elongated planar wall having exterior and interior surfaces, a base, a first and second vertical edge, and a top; wherein some of the plurality of panels are fastened together to form an elongated planar floor having an upper surface for walking and a lower surface contacting one of the ground and a foundation; and wherein some of the plurality of panels are fastened together to form a roof.

Claim 2 (Original): The structural panel system of claim 1, wherein the upper and lower faces, the edge, the flange and the plurality of ribs are made of polymer composite material.

Claim 3 (Original): The structural panel system of claim 2, wherein the polymer composite material is mixed with one or more additives selected from the group consisting of

lignin, cellulose, silica, aluminosilicates, alkali metal silicates, alkaline earth metal silicates, glass fibers, and metal.

Claim 4 (Original): The structural panel system of claim 1, wherein one or more of the plurality of panels has at least one opening, wherein the opening comprises a frame for a window, door, or ventilation.

Claim 5 (Cancelled).

Claim 6 (Presently Amended): The structural panel system of claim ~~5~~ 1, wherein the first and second vertical edges have a 45-degree angle miter cut disposed along the entire length of the edges.

Claim 7 (Original): The structural panel system of claim 1, wherein at least one of the plurality of panels includes at least one conduit, pipe, channel, electrical wire or raceway integrated in the at least one of the plurality of panels.

Claim 8-9 (Cancelled).

Claim 10 (Presently Amended): The structural panel system of claim 1, wherein some of the plurality of panels are fastened together to define a triangular-shaped roof truss.

Claim 11 (Original): The structural panel system of claim 1, wherein the plurality of panels are rectangular having a length dimension equal to the width dimension.

Claim 12 (Original): The structural panel system of claim 1, wherein the plurality of panels are rectangular having a length dimension that is twice the width dimension.

Claim 13 (Currently Amended): A structural panel system for use in constructing a building, comprising:

a plurality of composite polymer panels comprising:

a generally flat upper face and lower face in opposing relationship to each other;

an edge disposed peripherally around the upper and lower faces;

a flange disposed peripherally along at least a portion of the length of the edge extending parallel to the surface of the edge and above at least one of the upper and lower faces of the panels, wherein the flange includes a plurality of holes disposed along at least a portion of the length of the flange;

a plurality of horizontal raised ribs extending perpendicular to and across one of the upper and lower faces of the panels, wherein the other of the upper and lower faces is smooth and the plurality of horizontal raised ribs are substantially parallel to each other; and

a plurality of vertical raised ribs extending perpendicular to and across the same face as the plurality of horizontal raised ribs, wherein the plurality of vertical raised ribs intersect the plurality of horizontal raised ribs at approximately 90-degree angles; and

wherein the upper and lower faces, the edge, the flange and the plurality of horizontal and vertical raised ribs are integral pieces; and

a fastening device for securing the plurality of panels to each other;

wherein some of the plurality of panels are fastened together to form an elongated planar wall having exterior and interior surfaces, a base, a first and second vertical edge, and a top; wherein some of the plurality of panels are fastened together to form an elongated planar floor having an upper surface for walking and a lower surface contacting one of the ground and a foundation; and wherein some of the plurality of panels are fastened together to form a roof.

Claim 14 (Original): The structural panel system of claim 13, wherein the composite polymer material is selected from the group consisting of virgin or recycled polyolefins.

Claim 15 (Original): The structural panel system of claim 13, wherein the composite polymer material includes the addition of one or more additives selected from the group consisting of naturally-occurring and other materials such as sugar cane bagasse, rice husks, nut shells, wood, sand, clay, talc, glass fibers, and metal.

Claim 16 (Presently Amended): The structural panel system of claim 13, further comprising a plurality of rods ~~and other structural materials~~ integral to the plurality of panels for increasing dimensional stability of the panel.

Claim 17 (Currently Amended): A structural panel system for use in constructing a building, comprising:

a plurality of composite polymer panels comprising:

a generally flat upper face and lower face in opposing relationship to each other;

an edge disposed peripherally around the upper and lower faces;

a flange disposed peripherally along at least a portion of the length of the edge extending parallel to the surface of the edge and above at least one of the upper and lower faces of the panels, wherein the flange includes a plurality of holes disposed along at least a portion of the length of the flange;

a plurality of horizontal raised ribs extending perpendicular to and across one of the upper and lower faces of the panels, wherein the other of the upper and lower faces is smooth and the plurality of horizontal raised ribs are substantially parallel to each other;

a plurality of vertical raised ribs extending perpendicular to and across the same face as the plurality of horizontal raised ribs, wherein the plurality of vertical raised ribs intersect the plurality of horizontal raised ribs at approximately 90-degree angles; ~~and~~

a fastening device for securing the plurality of panels to each other; and

at least one longitudinally-extending reinforcing rod attached to the edge of the panel;

wherein the upper and lower faces, the edge, the flange and the plurality of horizontal and vertical raised ribs are integral pieces and wherein the plurality of panels are fastened together and assembled into a horizontal floor, a roof opposite the floor, and a wall between the horizontal floor and the roof thereby defining an interior space.

Claim 18 (Original): The structural panel system of claim 17, wherein the wall includes an opening defining a frame for a door.

Claim 19 (Original): The structural panel system of claim 17, where the roof is a pitched roof.

Claim 20 (Previously Amended): A method of constructing a structure defined by a horizontal floor, a roof opposite the floor, and a wall between the horizontal floor and the roof, comprising the steps of:

providing a plurality of pre-fabricated structural panels, wherein the structural panels comprise a generally flat upper face and lower face in opposing relationship to each other; an edge; a flange disposed peripherally along at least a portion of the length of the edge extending parallel to the surface of the edge and above at least one of the upper and lower faces of the panels; a plurality of raised ribs extending perpendicular to and across one of the upper and lower faces of the structural panels; wherein the other of the upper and lower faces is smooth and the upper and lower faces, the edge, the flange and the plurality of ribs are integral pieces; and wherein the panels are made of polymer composite material;

providing a schematic drawing depicting assembly procedures;

fastening the structural panels together in accordance with the schematic drawing by abutting the flange of one panel to the flange of another panel to form the horizontal floor, roof and wall; and

fastening the floor, roof and wall together to form a structure.

Claim 21 (Original): The method of claim 20, further comprising the step of compressing a composite material to form a plurality of pre-fabricated structural panels.

Claim 22 (New): The structural panel system of claim 1, further comprising at least one longitudinally-extending reinforcing rod.

Claim 23 (New): The structural panel system of claim 13, further comprising at least one longitudinally-extending reinforcing rod.